

Medicare's Bundled Payment Initiatives: Considerations for Providers

Introduction

Recently, the Centers for Medicare and Medicaid Services (CMS) has taken significant steps to expand the use of bundled payment programs. In October 2015, it announced that more than 1,600 participants had entered its Bundled Payment for Care Improvement (BPCI) program, including 415 acute care hospitals, 305 physician groups and 723 skilled-nursing facilities (SNFs). In November, CMS released its final rule for a new Comprehensive Care for Joint Replacement (CJR) initiative, a mandatory bundled payment program for total hip/knee replacement in 67 metropolitan statistical areas (MSAs) with 789 hospital participants beginning April 1, 2016.

Bundled payment sets a single spending target for all applicable health care services provided during a clinical episode of care over a specified time period. For example, a 90-day episode of care for total joint replacement could include the hospital stay, physician services, outpatient care, home health, post-acute facility services and readmissions. The goal is to create financial incentives that encourage providers to coordinate care across treatment

settings, reduce unnecessary services and expand initiatives that can help patients recover quickly.

The Department of Health and Human Services (HHS) is attracted to bundled payment because it can be implemented across a wider range of providers compared with initiatives like the Medicare Shared Savings Program (MSSP) in which organizations need a large base of primary care physicians to participate. Furthermore, the new bundled payment programs are designed to generate guaranteed cost savings. Given HHS's goal of shifting half of Medicare payments into alternative payment models by 2018, it is likely that CMS will continue to introduce new bundling initiatives.

This issue brief describes the evolution of bundling within the Medicare program; the opportunities bundling creates for hospitals and post-acute care providers; the challenges providers have encountered in recent initiatives; the issues providers should consider when entering a bundled payment program; and policy considerations associated with a broader expansion of bundling initiatives in Medicare.

History of Medicare bundled payment

The movement toward Medicare bundled payment began with the creation of the inpatient prospective payment system in 1983. In a single year, Medicare shifted from paying hospitals on the basis of reported costs to paying a fixed amount per inpatient stay based on a patient's diagnosis.ⁱ At the time, some policy officials proposed including physician services in the diagnosis-related group (DRG) payment model, but this idea was ultimately dropped.ⁱⁱ Although the DRG system represented a radical change for hospitals, it did not affect the way other providers were reimbursed.

In 1991, CMS began a bundled payment demonstration project for coronary artery bypass graft (CABG) surgery that included all hospital and physician services during the initial hospitalization and any readmissions within 90 days. Seven hospitals were selected to participate for five years. The program evaluation found that the demonstration generated

Medicare savings of about 10 percent and reduced death rates and major post-surgery complications.ⁱⁱⁱ However, the demonstration was never extended or expanded.

In 2009, CMS began a three-year physician-hospital collaboration demonstration with 12 New Jersey hospitals that allowed them to share internal cost savings with physicians. The program evaluation did not find any Medicare cost savings (though none were required by the demonstration), evidence of cost-saving behavior by physicians or systematic changes in quality.^{iv}

That same year the agency launched the three-year Acute Care Episode (ACE) demonstration to test prospective bundled payment for cardiac and orthopedic surgery that included inpatient hospital care and physician services during a hospital stay. CMS selected five hospitals to participate in the ACE demo and negotiated price

discounts with each of them. A 2013 evaluation found that Medicare saved about \$585 per case in the demonstration. But about 45 percent of those savings were offset by increased post-acute care spending in the post-discharge period.^v The evaluation found little evidence of changes in quality. Participants estimated that they saved between \$600 and \$2,600 per orthopedic case and \$500 and \$1,400 per cardiac case. Most of the savings came from negotiating better prices for implantable devices.

On Oct. 1, 2013, the Center for Medicare and Medicaid Innovation (CMMI) officially launched the Medicare Bundled Payment for Care Improvement (BPCI) initiative. Under this voluntary pilot program, hospitals, post-acute providers, physician group practices and other organizations assume risk for total spending relative to a target price for up to 48 clinical episodes that begin with an acute-care hospital stay. Examples include spinal fusion, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and stroke. The 48 episodes account for about

70 percent of total Medicare spending. Providers can participate in four different models and can choose among different episode definitions and durations.

On Feb. 12, 2015, CMMI announced a voluntary Oncology Care Model (OCM) that is slated to begin in spring 2016. OCM will establish bundled payments for six-month episodes of cancer treatment that begin at the start of chemotherapy. Participating oncology practices will receive a \$160 monthly care management payment and will be eligible for performance payments based on the practice's achievement and improvement on selected quality measures.

CMS's new CJR initiative builds on the components and lessons learned in BPCI. CJR hospitals will be accountable for the cost of episodes of total hip and total knee replacements – from the time of the surgery through 90 days after discharge.

Bundling program components

This section describes the principal elements of the current Medicare bundled payment initiatives focusing on BPCI and CJR, which are summarized in **Exhibit 1**.

Exhibit 1: Summary of BPCI and CJR Provisions		
	BPCI	CJR
Participation	Voluntary	Mandatory
Geography	National	67 metro areas
Duration	3 years	5 years
Clinical episodes	48 episode types	Total hip & knee replacement
Episode length	30/60/90 days	90 days
Responsible group	Physicians, hospitals, PAC	Hospitals
Target price	Provider-specific	Blend of provider and region
CMS discount	2 – 3%*	1.5 - 3%*
Reconciliation	Quarterly	Annually
Risk adjustment	MS-DRG only	MS-DRG and hip fracture status
Maximum gain	20%	0%/5%/10%/20% Yrs 1, 2,3, 4-5
Maximum loss	20%	0%/5%/10%/20% Yrs 1, 2,3, 4-5
Quality	Monitored	Required for NPRA payments

*BPCI discount is 2% for 90-day bundles & 3% for others. CJR discount varies with quality score.
NPRA = Net payment reconciliation amount.

Episode definition

Both BPCI and CJR episodes of care are based on Medicare-severity-DRG (MS-DRG) “families.” BPCI includes 48 episode types, which include up to 15 MS-DRGs each (see **Appendix A**). For example, renal failure episodes include three MS-DRGs (renal failure with major complication or comorbidity (MCC), renal failure with complication or comorbidity (CC) and renal failure without CC or MCC); CABG episodes have six. BPCI includes four distinct models:

■ **Model 1** is based on episodes that encompass Parts

A and B spending during a hospitalization and it essentially continues the 2009 CMS physician-hospital collaboration demonstration program. Participation has included only roughly a dozen New Jersey hospitals. Model 1 will not be continued past its original sunset date of March 31, 2016.

■ **Model 2** combines spending for acute hospital care and post-acute care. Participants can select episodes lasting 30, 60 or 90 days after patients are discharged from the hospital. Model 2 has 631 participants in the risk-bearing phase.

- **Model 3** focuses on post-acute care episodes that begin with the start of post-acute services as long as care begins within 30 days of a hospital discharge. Model 3 participants can select 30, 60 or 90-day episodes. Model 3 has 871 participants in the risk-bearing phase.
- **Model 4** is a prospective bundled payment for Parts A and B during hospitalizations plus the cost of readmissions. CMS makes a prospective payment to participating hospitals that then must pay the physicians. Similar to Model 1, less than a dozen hospitals participate in Model 4.

CJR includes the two MS-DRGs associated with hip and knee replacements: MS-DRGs 469 and 470. CJR target prices will be based on a 90-day episode as well.^{vi}

BPCI Model 2 and CJR include all related Parts A and B services provided during the duration of an episode including hospital care, physician care, readmissions, post-acute care and durable medical equipment. BPCI and CJR episodes exclude certain readmissions and Part B services that CMS has determined are unrelated to the index admission including transplantation, trauma services, acute surgical procedures and cancer care. CMS does, however, include all medical MS-DRGs as related services if patients are readmitted within 90 days under both programs.

Patient eligibility

Under, BPCI and CJR, Medicare beneficiaries must be enrolled in both Part A and Part B. Medicare Advantage beneficiaries and those with end-stage renal disease

(ESRD) or with Medicare as a secondary payer during the episode are excluded.

Target price

BPCI and CJR calculate target prices differently. CMS calculates BPCI Model 2 and Model 3 target prices using each participant’s historical claims data for a three-year period (**Exhibit 2**).

CMS will calculate CJR target prices as a blend of each hospital’s historical spending per episode and the regional average spending in the hospital’s census division. Initially, target prices will be based on two-thirds hospital-specific spending and one-third regional spending. In year 3 the prices will be one-third hospital specific and two-thirds regional. In years 4 and 5, target prices will be set at regional average episode spending levels.

In both programs, CMS adjusts the prices for geographic wage index differences to create standardized payment amounts and removes indirect medical education, disproportionate share and other special payments, which will continue to be paid outside of the bundle. Episode prices are set for each MS-DRG bundle, and in CJR CMS sets separate target prices for hip fracture patients. Neither initiative uses additional risk adjustment.

CMS takes a mandatory discount off the baseline BPCI target price that varies by BPCI model and episode length as shown on page 4. The discount applies to the full bundle price.

Exhibit 2: General Approach of BPCI Episode Pricing Rules



BPCI Target Price Discounts

	Hospital Stay	30-Day	60-Day	90-Day
Model 1	1% / 2% ¹			
Model 2		3%	3%	2%
Model 3		3%	3%	2%
Model 4	3% ²			

¹ Discount is 0.5% in year 1, 1% in year 2 and 2% thereafter for Part A services only.

² Model 4 discount is 3.25% for DRGs included in the ACE demonstration.

Under CJR, the agency proposes a 3 percent discount factor for calculating reconciliation payments in all five years. However a substantial number of hospitals will have their discount reduced to 2 percent based on quality scores. Top performers will be eligible for a 1.5 percent discount.

CJR hospitals are not required to make any repayments to CMS in the program's first year. In years 2 and 3, CMS will calculate hospitals' repayment responsibility based on target prices with a 2 percent discount. Hospitals can also reduce this discount based on their quality score. A majority of hospitals will likely achieve sufficient quality for a 1 percent discount and repayment discounts will drop to 0.5 percent for top performers.

The repayment discount rises to 3 percent in years 4 and 5 but it is reduced for hospitals that reach quality thresholds as shown below.

CJR Discount Factor by Performance Year

Quality Score	Reconciliation	Repayment Discount		
		Year 1	Years 2&3	Years 4&5
Below Acceptable	N/E	N/A	2.0%	3.0%
Acceptable	3.0%	N/A	2.0%	3.0%
Good	2.0%	N/A	1.0%	2.0%
Excellent	1.5%	N/A	0.5%	1.5%

Notes: NA is not applicable because hospitals do not have repayment responsibility in year 1.

NE is not eligible for reconciliation payment.

Payment updates

CMS updates BPCI episode prices quarterly based on the actual national average change in Medicare spending for each of the 48 bundles. Therefore, neither CMS nor

the hospitals know what the update factors will be until six months after the end of each quarter. This method of updating BPCI prices has been a source of substantial uncertainty for participants. In contrast, the CJR will update target prices using the annual Medicare payment system updates thus hospitals will know their target prices before the start of each performance period.

Risk mitigation

Under BPCI, participants must select one of three risk tracks, which are intended to reduce year-to-year variation in average episode spending caused by random variation in patient acuity.^{vii} Participants can select to have their high cost claims truncated at the national 99th, 95th or 75th percentile. More detail about BPCI risk tracks is provided in **Appendix B**.

CJR will truncate episode amounts that are more than two standard deviations (95th percentile) above the regional average. Amounts above the threshold are removed from target price calculations and from performance period spending.

Neither program makes additional risk-adjustments, such as for patient-specific clinical indicators, Hierarchical Conditional Categories or socio-demographic factors. However, CJR will price episodes with hip fractures, which are roughly 70 percent more costly, separately from other total joint replacement procedures.

Both programs have stop-loss limits, which give hospitals additional financial protection, as well as stop-gain thresholds. BPCI participant gains or losses are capped at 20 percent of the aggregate target amount across each participant's bundles. CJR hospitals are limited to gains of five percent of the aggregate target amount in the first two program years, 10 percent in the 3rd program year, and 20 percent in the last two years. CJR hospitals do not have downside risk in the first program year. In years 2 and 3, repayments for losses will be limited to 10 percent of the aggregate target amount respectively. In years 4 and 5 repayments will be capped at 20 percent. CMS proposes much lower limits on repayments from sole community hospitals, rural referral centers, rural hospitals and Medicare-dependent hospitals.

Precedence rules

Hospitals, physician group practices (PGPs) and post-acute care providers all can participate in BPCI as Awardees or episode initiators so CMS established precedence rules to determine which organization is responsible for a BPCI episode when a patient receives care from more than one BPCI Awardee during an episode. Model 4 episodes always receive “precedence” over Model 2 and Model 3 episodes, and Awardees that begin the risk-bearing phase of BPCI earlier have precedence over those that entered later. If multiple categories of Awardees are involved, precedence is given to PGPs, and if multiple PGPs are involved, the episode is assigned to the PGP with the attending physician. If a patient is simultaneously assigned to a Model 2 and Model 3 episode, the case is usually assigned to the Model 2 episode initiator.

CJR was designed to minimize potential overlap with BPCI. CMS selected MSAs with low BPCI participation as CJR sites, and any hospitals that participate in BPCI are ineligible for CJR. However, if a beneficiary is admitted to a CJR hospital and treated by a PGP participating in BPCI Model 2, then precedence would be to the PGP and the CJR episode would be canceled. This also would occur for patients in a CJR episode who are served by a BPCI Model 3 provider within 30 days of discharge. Therefore, BPCI episodes will always have precedence over CJR episodes.

Quality requirements

BPCI monitors quality on an ongoing basis, but does not set a quality threshold that participants must meet to receive reconciliation payments. In contrast, CJR will calculate a composite quality score, and each hospital must achieve a minimum quality threshold to be eligible for reconciliation payments from CMS. According to CMS, 90 percent of hospitals are expected to meet the minimum threshold.

The composite score is calculated based on two measures: risk-standardized complication rates (RSCR) for total knee and hip replacement and hospital consumer assessment of healthcare providers and systems (HCAHPS) survey scores. Hospitals can increase their quality score with voluntary submission of designated patient reported outcome (PRO) data. Each hospital’s score for the RSCR and HCAHPS measures are calculated based on the hospital’s performance relative to the distribution of performance nationally (**Exhibit 3**).

Exhibit 3: CJR Composite Quality Score Development

Percentile	Complications Points	HCAHPS Points	Composite Quality Score	Quality Category
≥ 90th	10.00	8.00		
≥ 30th to < 90th	5.50 - 9.25	4.40 - 7.40	≥ 4.0 to < 6.0	Acceptable
< 30th	0.00	0.00	≥ 6.0 to ≤ 13.2	Good
			> 13.2	Excellent

Data Submitted?	PRO Measure Points
Yes	2.00
No	0.00

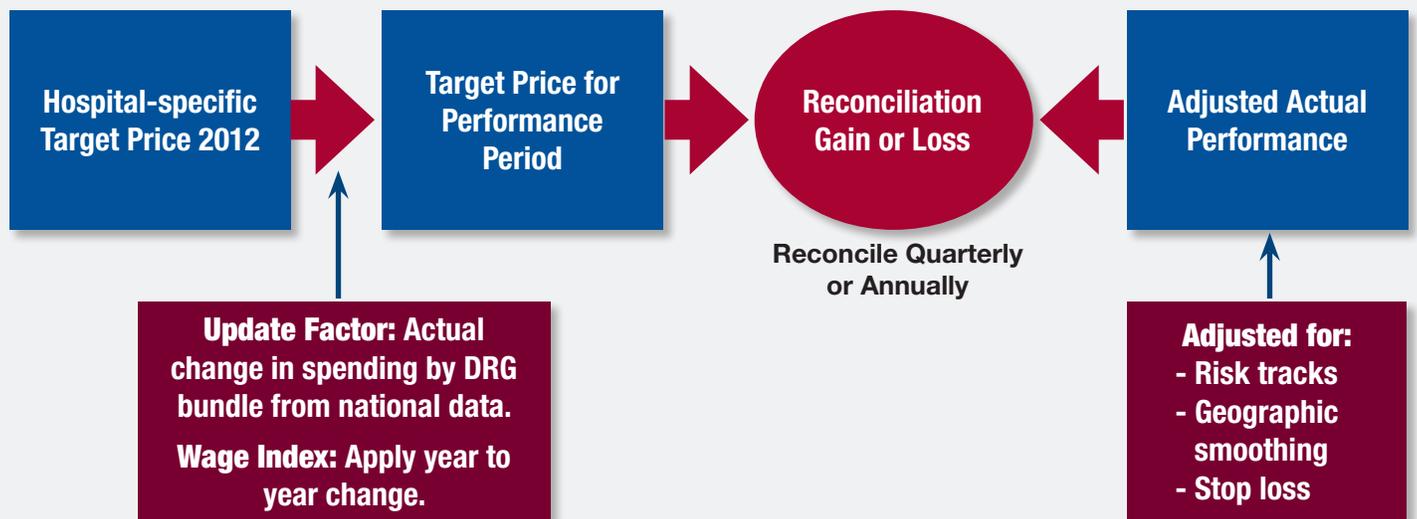
Hospitals also can earn additional points with a 3 decile year-over-year improvement in RSCR and HCAPS performance (e.g., from 30th percentile to 60th percentile nationally). CMS estimates less than 100 hospitals would be eligible for improvement points.

Reconciliation

BPCI has quarterly financial reconciliations that occur six months after the end of each quarter (**see Exhibit 4**). Participants receive a worksheet with the reconciliation amounts for each MS-DRG episode along with the underlying calculations. The net payment reconciliation amount (NPRA) is the total target amount for the performance period minus the total adjusted fee-for-service payments. As discussed above, gains and losses are capped at 20 percent of total episode spending. CMS also conducts “true-ups” to prior period reconciliation results to reflect claims that were not included in the initial reconciliation. CMS performs true-ups for three quarters beyond the initial reconciliation so that quarterly results are not finalized for an additional nine months. CJR will have annual reconciliations, but the process will be generally similar to BPCI.

If Medicare beneficiaries are cared for by a BPCI provider or CJR hospital and are also attributed to a MSSP or Pioneer Accountable Care Organization (ACO), the bundled payment provider will be credited with gains or losses for the bundled services and the amounts will be removed from the ACO settlements. If bundled payment providers are part of an MSSP or Pioneer ACO and the ACO earns positive shared savings payment, CMS will recapture any portion of the 2 percent bundled payment discount paid to the ACO as shared savings from the BPCI or CJR provider.

Exhibit 4: Illustration of BPCI Reconciliation



Post-episode monitoring

Under BPCI and CJR, CMS monitors post-episode spending for 30 days to identify any systematic increase in post-episode spending. The monitoring is intended to ensure bundling participants do not shift services out of the episode time period to reduce episode spending. If CMS determines that post-episode spending is systematically higher than it was during the baseline period, bundlers must return excess spending to Medicare.

Program waivers

Certain waivers of Medicare requirements can help participants in bundling programs implement care redesign more effectively. Under BPCI, participants must provide information about how they plan to modify services or financial arrangements in an implementation protocol (IP) submitted to CMS.

- **Three-day hospital stay waiver for coverage of SNF services.** Medicare does not cover care in a SNF unless it is preceded by a three-day acute care hospital stay. Model 2 BPCI participants may apply for a waiver of this provision so that SNF-qualifying hospital admissions may be shorter than three days. As a condition of the waiver, participants must prospectively identify partner SNFs, and the majority of these must be rated three stars or higher under the Nursing Home Compare five star rating system. CJR will waive the three-day hospital stay rule in years 2 through 5 for partner SNFs that have at least a three-star rating.

- **Post-discharge home visit waiver.** BPCI participants may deliver up to three visits in the beneficiary's home by licensed clinical staff paid under the physician fee schedule, and Medicare waives the current requirement that these staff must be under the "direct supervision" of a physician. CJR will allow up to nine post-discharge home visits to be billed and paid under the general supervision of a physician.
- **Telehealth waiver.** Geographic restrictions on coverage of telehealth service to Medicare beneficiaries may be waived in both BPCI and CJR as long as the service is consistent with other coverage and payment criteria.
- **Gainsharing waiver.** BPCI participants may share incentive payments they receive with partners, including physicians and post-acute providers. Physician gainsharing cannot exceed 50 percent of the regular Medicare fees that they receive in BPCI episodes. Participants must describe gainsharing methods in their IP, and gainsharing partners must achieve the quality metrics that participants propose and CMS approves. For CJR, CMS allows hospitals to share reconciliation payments and internal cost savings with care partners as well as contract for shared risk. Again physician gainsharing cannot exceed 50 percent of the regular Medicare fees they receive for the episode. For both programs, CMS and the HHS Office of Inspector General have waived the physician self-referral and anti-kickback laws with respect to financial arrangements that otherwise comply with the programs' requirements.

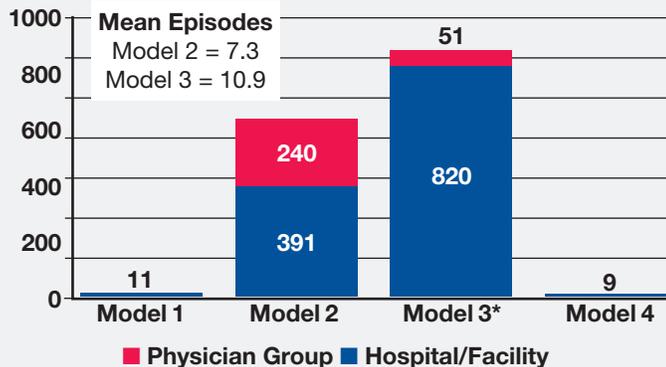
BPCI enrollment

More than 1,600 organizations were participating in BPCI as of October 2015 including 415 acute care hospitals, 305 physician groups and 723 SNFs taking on risk for more than 14,000 clinical episodes. This reflects more than seven clinical episodes per participant on average in Model 2 and 11 episodes per participant in Model 3 (**Exhibit 5**).

About 27 percent of Model 2 participants and 35 percent of Model 3 participants selected more than 10 episodes. Among participating physicians, hospitalist groups control about 70 percent of the bundles. The most common episodes are major joint replacement followed by COPD, CHF, sepsis and pneumonia (**Exhibit 6**).

The vast majority of participants entered the program through third-party awardee-conveners that provide analytic and risk management services, and contract directly with CMS on behalf of the providers. Several conveners help manage the majority of episodes in BPCI with a single group, Remedy Partners, accounting for about half of the BPCI episodes (**Exhibit 7**).

Exhibit 5: Number of BPCI Participants, October 2015



Source: CMS BPCI Analytic File as of Oct. 13, 2015.
*Includes HHAs, LTCHs, IRF and SNFs.

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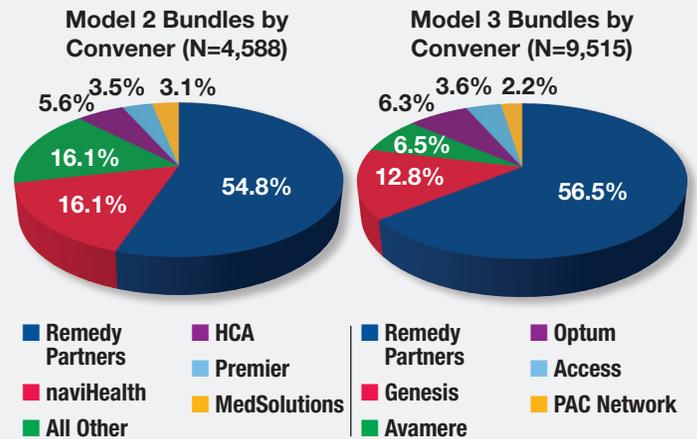
Exhibit 6: Percent of Participants Choosing Episode Type in BPCI Model 2 (N = 631)

Major joint replacement	68.0%
Congestive heart failure	34.9%
Simple pneumonia	34.2%
COPD, bronchitis, asthma	31.9%
Sepsis	29.8%
Hip & femur procedures	26.8%
Cellulitis	24.2%
Uninary tract infection	23.8%
Acute myocardial infarction	22.8%
Medical non-infectious orthopedic	22.2%
Other Respiratory	20.3%

Source: CMS BPCI Analytic File as of 10-13-2015.

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Exhibit 7: Number of Bundles by Convener



Note: Remedy Partners and Liberty Partners episodes are combined.
Source: CMS BPCI Analytic File as of Oct. 13, 2015.

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Bundling opportunities

Hospital care

Hospitals have many opportunities to improve quality and achieve positive financial results in bundling programs. In contrast to ACO initiatives that generally focus on primary care, bundled payment offers an opportunity to directly engage specialist physicians in care redesign.^{viii} Participants in Medicare's Acute Care Episode (ACE) demonstration worked successfully with surgeons to reduce spending, particularly through improved acquisition of implantable devices.

Hospitals need to undertake a range of activities to support performance management in bundling. First, they will need systems for identifying patients likely to qualify for bundled episodes early – particularly if they are at high risk for complications or are likely to need medical or social support after they are discharged. Second, hospitals will need to establish teams that will work with physicians to implement standard care processes to reduce treatment variation. Such efforts have been shown to reduce complications, readmissions and hospital

length of stay when they are implemented effectively.^{ix} Hospitals also need to have a high-functioning discharge planning process. Hospitals in risk-based payment models increasingly rely on discharge planners to help patients gain access to high-quality post-acute services in appropriate settings and to coordinate effectively with the patients' primary care providers upon discharge.

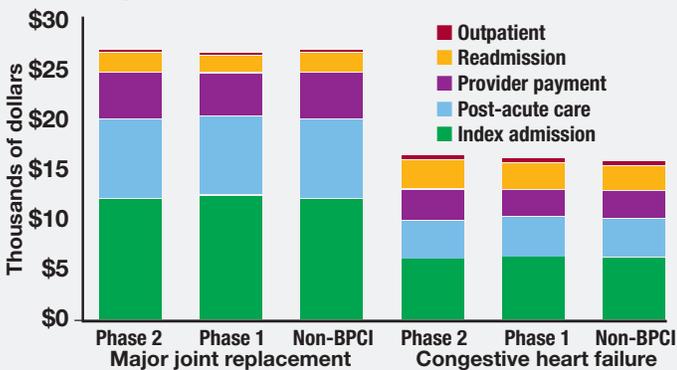
Post-acute care

The most significant opportunities for reducing spending and improving quality generally occur after patients are discharged from the hospital. Post-acute care is a major component of total per-episode spending. For example, post-acute care and readmissions account for nearly 40 percent of Medicare spending for 30-day CHF episodes and 37 percent of spending for joint replacement episodes (Exhibit 8). These proportions increase for longer episodes. Post-acute care spending varies greatly from provider to provider and across geographic markets. A recent Institute of Medicine study found that post-acute care was the single largest factor driving geographic variation in Medicare per-beneficiary spending.^x

Bundling participants can adopt several strategies to manage post-acute care more effectively.^{xi} One is

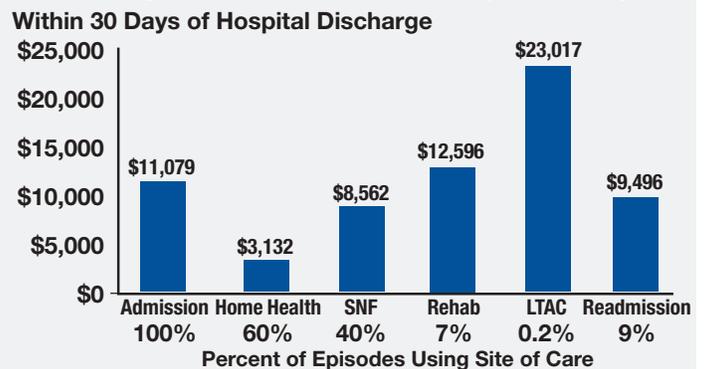
reducing unnecessary use of more intensive facility-based settings and referring patients to lower cost settings when appropriate. The average cost of home health after a major joint replacement is a fraction of the cost of a SNF or rehabilitation hospital stay (Exhibit 9). Another is establishing preferred relationships with post-acute providers that have demonstrated good outcomes and are willing to collaborate on performance improvement. There is significant variation in average length of stay, readmission rates and quality across post-acute facilities. For example, risk-adjusted Medicare readmission rates are 14.4 percent or less in the top 25 percent of U.S. SNFs and 22 percent or more in the bottom 25 percent.^{xii} Providers will have to balance the potential dollars saved in placing a patient in a lower cost setting against the possibility that the chosen care site will lead to more patient readmissions or complications, thereby driving overall episode costs up. While providers can establish preferred post-acute networks, Medicare beneficiaries are free to choose their own providers and many favor post-acute facilities that are close to their families. A third strategy for bundling participants is investing in systems and personnel to coordinate care transitions effectively. Finally, participants have reduced readmissions from nursing homes and average length of stay using teams of physicians and advanced practice clinicians that conduct regular rounds in nursing facilities.

Exhibit 8: Components of Thirty-day Spending for Major Joint Replacement and Congestive Heart Failure, by Phase, 2011



Source: Tsai TC et al. *Health Affairs*, March 2015.
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Exhibit 9: 2008 Medicare Post-acute Care Payments Per User by Site of Service: DRG 470 (Total Joint)



Source: RTI Inc, Post-acute Care Episodes: Expanded Analytic File, June 2011

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Challenges in bundling

Random variation in year-to-year episode spending

One of the most challenging aspects of any bundled payment program is random variation in the average cost of treating a cohort of patients in a particular clinical episode. This occurs because of the substantial variation in the severity of patients (and number of cost outliers) over a given period of time. The problem is exacerbated because most providers have a relatively low case volume in any particular bundle. For example, if a hospital has 50 cases with average episode spending of \$15,000 in year 1 and the exact same cases in the year 2 except that one patient became a \$100,000 outlier case, the average per-episode cost would rise by 11.3 percent. If the hospital has the exact same distribution of patients over two years but with no outliers in year 1 and two \$100,000 outliers in year 2, the average per-episode cost would increase by nearly 23 percent (**Exhibit 10**). If year 1 was used to establish a target price and year 2 was the performance period, the hospital would incur a large loss while if the outliers occurred in year 1 and not in year 2 the hospital would incur a large gain.

Higher case volume substantially mitigates random variation. While a \$100,000 outlier would add \$1,700 to the average cost of the hypothetical hospital with 50 cases it would add only \$170 per episode for a provider with 500 cases. In general, the average costs of surgical episodes vary less from period to period than the average episode costs of hospitalized patients with chronic medical conditions.

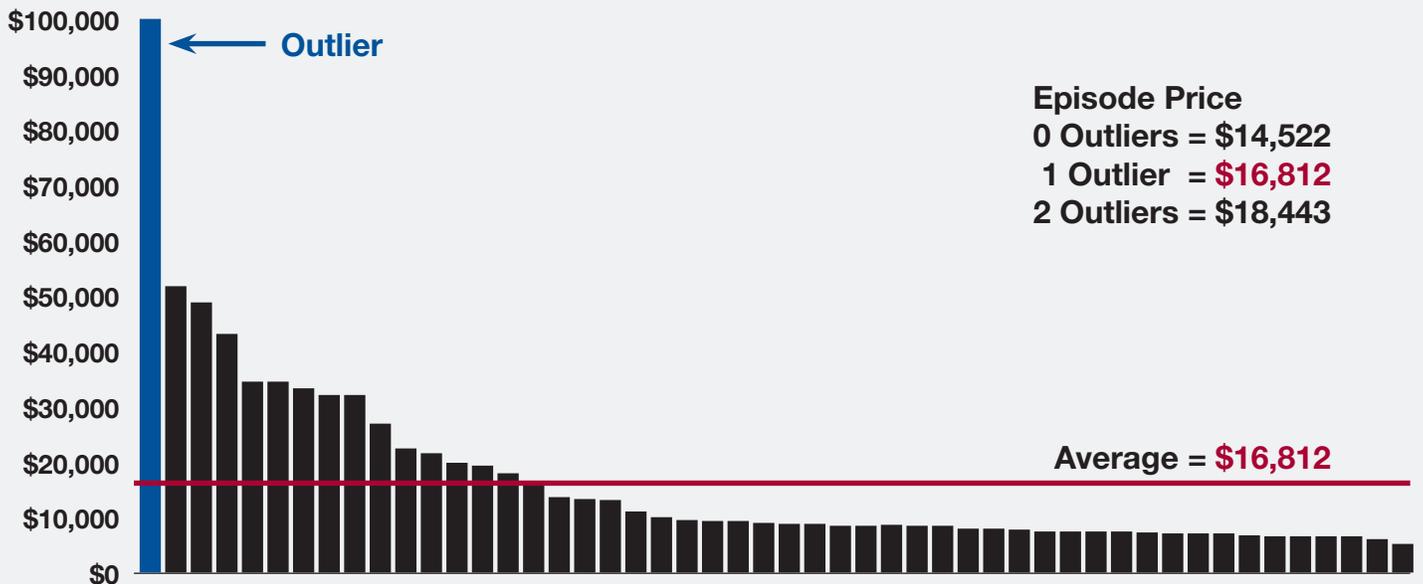
Bundling participants need strategies to address the risk of random variation. One approach is to reduce variation by selecting a portfolio of bundles to increase volume. Another is to purchase reinsurance or, under BPCI, contract with facilitator-conveners that are willing to share risk. (Facilitator-conveners cannot contract with Medicare in CJR but can contract with providers to supply reinsurance services.) BPCI conducts quarterly payment reconciliation, and, since quarterly volume is low, quarterly performance varies substantially. Rather than focus too much on quarterly results, participants should be aware of random variation, develop methods to reduce it and maintain a longer-term perspective that focuses on performance improvement.

Developing operational capabilities

Bundled payment participants need to invest in new capacity and infrastructure to succeed. These include the capacity to:

- **Identify patients eligible for bundles early and assess their risk for complications.** BPCI episodes are triggered by MS-DRGs, but hospitals do not typically finalize MS-DRG assignments until they bill Medicare. Participants will need to identify likely eligible patients early, as well as identify patients at risk for adverse events, such as readmissions, who are likely to need extra support after they are discharged. This not an issue for CJR because DRG selection for joint replacement surgeries is clear and most cases are scheduled in advance.

Exhibit 10: Illustration of Outliers Impact on Average Spending/Price for 50 Episodes



■ **Establish data analytic and information sharing capabilities.** Bundlers have access to a vast array of new data that can help them evaluate the full spectrum of care that their patients receive and identify areas for performance improvement. Bundlers need to analyze the data quickly and transmit information to their physician and post-acute care partners. They need to develop systems that allow them to share patient data with care partners on a real-time basis. They also need to develop approaches to help determine the best post-acute care setting for individual patients upon discharge.

■ **Track patients across the continuum of care.** Hospitals and post-acute care providers historically did not routinely follow patients after they were discharged from the inpatient setting. With bundling, providers need personnel and systems that follow patients throughout the recovery process and respond rapidly if patients suffer complications or show signs of decompensation, such as failure of the heart to maintain adequate blood circulation.

■ **Redesign care.** Participants in bundling need to develop standard care protocols and longitudinal care plans, establish new staff roles such as nurse navigators, develop systems where physicians or advance-practice clinicians round regularly in post-acute facilities, and establish processes to ensure smooth transitions between care settings that include “warm-handoffs” between providers.

■ **Engage physicians.** Participants need to educate physicians about bundling initiatives, identify physician champions to lead clinical process improvement efforts, and provide appropriate data, resources and incentives to support progress.

■ **Coordinate care transitions and manage post-acute services.** Efficient, high-quality post-acute care is essential for success under bundled payment. Providers under bundled payment must be able to evaluate post-acute care providers and develop relationships with those that deliver good quality, coordinate transitions between acute and post-acute settings, and create efficiencies and manage care across the continuum of post-acute care.

Participant experiences with BPCI

NYU Langone Medical Center is an academic medical center in New York City with four hospitals, 64,000 annual inpatient admissions and a clinically integrated physician network with more than 2,500 employed and independent physicians. NYU was one of the first hospitals to enter BPCI in October 2013 with Model 2 episodes for major joint replacement, cardiac valve surgery and posterior spinal fusion. It entered BPCI because it expected that the Affordable Care Act would catalyze payment reforms across multiple payers and it expected to develop new insights and capabilities from managing episodes that it could apply to other payment initiatives.

NYU felt it was critical to have a dedicated BPCI team and hired a senior administrator to direct the initiative. It spent a year preparing for BPCI, guided by a steering committee of senior management and clinical leaders. Before starting the risk phase of the program, it created a new network integration department with five full-time equivalent (FTE) Nurse Care Coordinators (NCC) dedicated to managing BPCI patients. Data analytics was a critical component of NYU's preparations. Because hospitals do not know most patients' Medicare DRG assignment until after they are discharged, NYU created a clinical algorithm to identify likely BPCI

patients during pre-admission screening and programmed the tool directly into its electronic medical record. It created a BPCI patient registry so NCCs could begin working with patients during the pre-admission period. It created a risk stratification tool to identify which patients were good candidates for home care and a process to ensure that staff created consistent expectations about where patients were likely to go for post-acute care. Finally, it developed clinical dashboards with key BPCI metrics like discharge disposition and readmissions that it shared weekly with physicians.

NYU faced several challenges of particular importance to tertiary care hospitals. As new technologies and treatment techniques come into practice, BPCI's approach for using historical data to set target prices for future periods can lead to pricing distortions. For posterior spinal fusion, for example, NYU began to see substantially more patients where surgeons were fusing six to eight vertebra rather than two or three. These are more complicated surgeries with higher hardware costs, and longer operating and recovery room times. These extra costs are not reflected in BPCI pricing since there is no change in DRG classification or risk adjustment. But they have resulted in higher-cost outlier payments relative to what NYU experienced in the baseline and led to financial losses.

Also, advancement in minimally invasive medical technology allowed anterior and posterior fusion of the spine to be performed via a single incision. This changed the classification of the procedures from an anterior posterior fusion DRG to a posterior fusion DRG, which lowered reimbursement by at least \$20,000 and also increased the outlier payments related to the baseline. NYU dropped out of spine bundles in January 2015 because the baseline target prices were inconsistent with current clinical practice. NYU had similar concerns about transcatheter aortic valve replacements (TAVR), but these were allayed when CMS introduced new DRGs for TAVR in October 2014.

NYU had several additional concerns. One was the loss of indirect and direct medical education payments as it reduced readmissions for BPCI patients. Another was the loss of inpatient rehabilitation facility revenue as it worked to care for more patients in their homes. A third was the lack of predictability in the CMMI patient reconciliation including the method for trending target prices forward and the use of multiple “true-ups” for quarterly reconciliations. NYU added BPCI episodes for CABG in 2015 but decided not to take risk for medical bundles due to the heterogeneity of factors that drive the high cost medical cases. NYU is adapting the tools it has developed for BPCI to manage performance in shared savings contracts, which now cover about 200,000 of its commercial and Medicare Advantage patients.

Kindred Healthcare is a national health care company with more than 100,000 employees in 47 states. It operates the full continuum of post-acute services ranging from long-term care hospitals (LTCH) to home care. In 2014 Kindred entered BPCI with two LTCHs and one SNF in Cleveland. Kindred refers to Cleveland as one of its “integrated care markets,” where it offers a full range of post-acute services (including primary care) and can transition complex patients effectively from more intensive to less intensive care settings with well-coordinated hand-offs from provider to provider. Kindred joined BPCI Model 3 expecting that value-based payment models would come rapidly and wanted to gain experience with bundling. Kindred initially selected seven episodes: CHF, COPD, major joint replacement, hip and femur procedures, pneumonia, sepsis and other respiratory. Its primary objective was to manage high-cost critically

chronically ill patients such as those on ventilators and those recovering from severe sepsis more effectively.

Kindred officials believe that it achieved clinical improvements during the first year of BPCI such as reducing readmissions. But it has struggled with the program’s economics given its focus on critically complex patients. Despite participating in seven bundles, it only treated a small number of critically complex patients across its three Cleveland facilities (for example, only 18 ventilator patients in nine months), which created significant outlier risk. BPCI does not risk adjust episode spending (aside from pricing MS-DRGs separately) so that gains or losses on complex patients are essentially random. As a single organization with different types of post-acute providers in the same MSA, Kindred’s target prices are based on a blended rate that underpays for LTCH patients and overpays for SNF patients. Kindred did not include its home health division in its BPCI application because of concern that it would lower the blended rate to an untenable level.

Although it selected a 60-day episode period, Kindred believes a much longer time period is needed to realistically assess performance managing critically complex patients. For less complicated patients, it has had difficulty determining which patients are in BPCI since hospitals do not know the DRG assignment when the patient is discharged to a post-acute facility. Moreover, the use of DRGs in Model 3 has very little relationship to functional status, which is how most post-acute providers think about patient care.

Kindred officials suggested that CMS consider developing a different payment model for the type of critically complex patients treated in LTCHs. It believes there is substantial opportunity to improve care and reduce spending for these patients but would prefer full-risk prospective payments across a longer time frame (e.g., 12 months); it is currently discussing such an arrangement with private payers. Following its 2014 experience Kindred dropped all but one of its LTCH episodes from BPCI but added the episodes back so that it was participating in the original seven episodes as of October 2015. It plans to stay in BPCI for the time being so that it can continue learning. Ultimately, however, it would like to work with CMS to explore new payment methodologies for its most complex patients.

Canton-Potsdam Hospital (CPH) is a 94-bed general medical and surgical hospital in Potsdam, N.Y., that provides about half of the community hospital care in a county of 110,000 residents located on the Canadian border. CPH participates in a small ACO with the University of Vermont Medical Center and a 168-member physician organization. It entered BPCI's Model 2 in January 2014 with episodes for major joint replacement and CHF. CPH joined BPCI primarily to gain experience with managing care under alternative payment arrangements. It is part of a facilitator-convenor group led by the Estes Park Institute, a group primarily focused on testing the BPCI model with small and rural community hospitals. The program would need to be designed in a way that these hospitals can perform successfully if BPCI were to become a national model.

Estes Park submitted a proposal for a CMMI innovation grant along with the BPCI application to help offset the significant BPCI infrastructure costs and to build a shared learning network for small community hospitals. The application was not successful and the number of interested hospitals dropped from more than 30 to about a dozen. Hospitals found the data component of the application process daunting even as Estes Park provided analytic support through Brandeis University. Most of the hospitals also were uncomfortable with the risks associated with price variation since they had relatively small numbers of episodes in their institutions. CPH was determined to stay the course. It saw BPCI as a way to gain valuable experience developing new models of care with a payment model that supported its goals of better care, lower costs and improved community health status.

CPH established a new Care Transitions Department with approximately 10 FTE staff including a Medical Director of Population Health at an annual cost exceeding \$1 million. The department identifies patients likely to be included in a BPCI episode and assigns them to outpatient nurse care managers. The case managers stratify patients based on acuity to determine whom they need to follow. They educate CHF patients about what to expect after they are discharged from the hospital and continue to follow them in the community, supplemented by a health coach program that CPH developed with two local universities. CPH has a multi-provider patient-centered medical home (PCMH) where patients can go for care after their hospitalization.

It also deploys clinicians into the community as needed. CPH has met with skilled nursing providers and some have agreed to develop patient-specific care plans with protocols that have led to reduced lengths of stay for major joint replacement patients. It views its relationships with local SNFs as collaborative and has not set up a preferred post-acute care network.

CPH's participation in BPCI is closely linked to its ACO and PCMH efforts and has led to many positive outcomes. It has engaged physicians in understanding the cost of episodes of care and factors driving variation. The programs have led to new practices that have decreased hospital utilization and improved care. Over the past 18 months, CPH's overall readmission rate has declined from 13 percent to 8 percent. The proportion of inpatients that have a follow-up appointment with a physician prior to discharge increased from 60 percent to 91 percent. All outpatient practices now have a centralized RN triage after-hours call service with local physician back up, which has reduced avoidable emergency department visits. CPH has concluded that the most important factor for success in both the ACO and BPCI initiatives is the ability to effectively engage community physicians.

CPH faced several challenges in BPCI. One was identifying BPCI patients correctly. It has encountered differences of 20 percent or more in the number of CHF and total joint patients it identifies internally and the number identified in the CMS data. Also, as a smaller hospital, its volume and cost numbers vary substantially from quarter to quarter. The amounts reported as being owed to CMS or due to the hospital in a given quarter have changed significantly as CMS has updated the results. From a management and governance perspective in a small organization, knowing with certainty whether it has made \$25,000 for a quarter or lost \$50,000 is significant. The data, calculation methodologies and exclusions used by CMS to calculate its program's performance have been opaque. This reduces the hospital's confidence that gain or loss calculations are accurate and erodes confidence in BPCI generally. "We view BPCI as a tool to make our patients healthier" a senior CPH executive said. "It helps you look beyond day to day – one treatment at a time thinking to how to improve the health of your population and community. Our participation has been valuable, but unless CMS makes changes to the program, it will be difficult for small and rural hospitals to participate successfully."

IPC Hospitalist Physicians is the largest hospitalist company in the U.S. with about 2,000 clinicians, including a significant number that specialize in caring for patients in post-acute care settings. Because it believes that physicians need to have a seat at the table in new payment models, IPC began in July 2015 to transition 20 groups into Model 2 with between 7 and 27 episodes each. The move will make IPC one of the largest BPCI participating provider groups.

IPC believes the major opportunity created by BPCI is in managing post-acute care, and that its expertise in both hospital and post-acute care medicine positions it well to place patients in the right post-acute settings; manage length of stay in post-acute care facilities; and treat acute exacerbations quickly so that patients do not bounce back to the hospital. IPC is partnering with naviHealth, which will provide analytic services, post-acute case management and share financial risk. IPC physicians are already organized into “pods” that meet regularly and work collaboratively. IPC expects to improve care primarily by providing physicians with much better information about the care that patients are receiving across the continuum and benchmarking data that help them identify areas for improvement.

IPC has contracts with some of the hospitals where its physicians work while it operates as a private practice model in others. Hospitals have had varied reactions to IPC’s decision to join BPCI: some do not want physicians to “trump” them under the precedence rules; some have episodes that differ from what IPC selected; and some do not care. However, IPC believes tensions will arise, particularly if hospitals own post-acute facilities since IPC plans to reduce unnecessary post-acute utilization. IPC is designing gainsharing arrangements but expressed concerns about BPCI’s policy that limits physician gainsharing to 50 percent of Medicare fees. “Medicare might pay a hospitalist \$450 for a 5-day inpatient stay,” said one executive. “How does it make sense that they can only earn \$225 for saving thousands on a \$25,000 case?”

Dignity Health is one of the nation’s largest health systems with 39 hospitals in California, Arizona and Nevada, and nearly 400 care sites in 20 states. Two of its hospitals, St.

Bernadine Medical Center and Community Hospital of San Bernardino entered BPCI in 2014 with 46 and 24 bundles respectively. The hospitals had recently established a clinically integrated network with 250 independent physicians and believed that a large commitment to BPCI would help them catalyze physician-hospital alignment.

The two Dignity Health hospitals are partnered with naviHealth as their awardee-convenor. NaviHealth provides software that analyzes clinical data and generates a risk score that helps the hospitals select the most appropriate post-acute care setting for each patient. Dignity Health shares BPCI performance risk with naviHealth, and some of its hospitals have established gainsharing arrangements with their physician partners.

Dignity Health has hired new staff and reorganized its inpatient care coordination program in preparation for BPCI. The Dignity Health care coordinators ensure that patients make a smooth transition from the hospital to the home or to an appropriate post-acute provider. They work closely with naviHealth staff to coordinate post-acute services for the BPCI patients. The hospitals have a database of community-based services, such as meals on wheels, transportation, home care, education and other supports as a resource for care coordinators and their patients.

The San Bernardino hospitals have identified several challenges. One is identifying BPCI patients quickly since DRG classifications are not finalized until after patients are discharged. Another has been the resource intensity of tracking BPCI patients across the full continuum of services. Also, the quarterly changes in BPCI target prices and the rolling reconciliation process make it very difficult to project financial results accurately. Nevertheless, Dignity Health supports BPCI as an initiative that seeks to foster care redesign and collaboration among hospitals, physicians and post-acute providers to improve patient care. It anticipates that both CMMI and private payers will continue to implement new payment innovations. Twenty-three more Dignity Health hospitals joined BPCI in July 2015 as it continues its clinical transformation efforts to improve patient care and prepare for the evolving payment landscape.

Policy considerations

The introduction of Medicare's mandatory CJR model is a clear signal that CMS is interested in expanding bundled payment as part of its effort to move 50 percent of Medicare payments into alternative payment models by 2018. This raises several policy issues.

BPCI pricing is currently provider-specific like the MSSP. This is a good initial approach because it encourages high-cost providers to enter the program and work on performance improvement. CJR begins with a blend of hospital-specific and regional average episode pricing and transitions to regional average pricing by year four. This will intensify the pressure on higher-cost providers and MSAs with costs above the regional norm to reduce spending while making CJR more attractive to lower-cost providers and MSAs. This rapid shift to a regional pricing model will be very challenging for some providers.

CMS is likely to consider mandatory bundled payment models for other clinical episodes as well as new episode

designs such as bundles that trigger at diagnosis. Total joint replacement is a high-volume procedure with relatively low spending variation, making it an ideal procedure for testing mandatory bundled payment. In contrast, other common medical conditions like CHF, COPD, pneumonia and sepsis have more heterogeneous patients, less well-defined clinical protocols and greater spending variation. Several hundred BPCI providers have elected to take risk for these conditions and documenting their experience will be important.

Bundling payments for chronic and medical conditions may require that CMS develop more advanced techniques for mitigating the risk of random variation in participants' average year-to-year spending before providers will be comfortable with mandatory models. These could include better risk adjustment, exclusion of more low frequency high-cost services from bundle pricing, separate pricing of certain patients with higher cost conditions as CMS has done with hip fracture patients in CJR, or removal of certain high-risk patients from bundle pricing altogether.

Conclusion

The BPCI initiative has experienced substantial voluntary enrollment with more than 1,600 participants as of October 2015. CMS has signaled its interest in expanding bundled payment through mandated participation as evidenced by CJR. Much is still unknown about the impacts of bundled payment, and CMS has not completed a full evaluation. The vast majority of BPCI participants began in mid-2015 so more time is needed to properly assess its impact. While nearly all of the 2014 BPCI participants were hospitals, the 2015 entrants represent a wide range of providers, including relatively large enrollments of hospitalist physicians and SNFs.

CJR has many features in common with BPCI. But it includes important refinements like a more transparent

method for updating episode prices that makes it easier for participants to budget and monitor financial progress. But CJR has more controversial elements: namely mandatory participation, rapid transition to regional pricing and designating hospitals as the entity responsible for bundle performance with control over gains earned from managing expenditures. These elements could indicate a long-term direction for Medicare bundled payment. The potential value of bundled payment lies in encouraging hospitals, physicians, and post-acute providers to work together and coordinate patient care from hospitalization through recovery leading to lower spending, improved quality and better patient experience. Together, these programs will be important tests of how well Medicare bundled payment efforts can achieve these desired outcomes.

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^{vi}Note: Under CJR the 90 day period includes the date of discharge while in BPCI it does not.

^{vii}CMMI conducts an additional adjustment to mitigate price variation in low volume episodes called "Empirical-Bayes" (EB).

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Episodes of Care and MS-DRG Groupings Under the Bundled Payments for Care Improvement Initiative for Models 2, 3 and 4

Episodes of Care	MS-DRGs
Acute myocardial infarction	280, 281, 282
AICD generator or lead	245, 265
Amputation	239, 240, 241, 255, 256, 257, 474, 475, 476, 616, 617, 618
Atherosclerosis	302, 303
Back and neck except spinal fusion	518, 519, 520
Coronary artery bypass graft	231, 232, 233, 234, 235, 236
Cardiac arrhythmia	308, 309, 310
Cardiac defibrillator	222, 223, 224, 225, 226, 227
Cardiac valve	216, 217, 218, 219, 220, 221, 266, 267
Cellulitis	602, 603
Cervical spinal fusion	471, 472, 473
Chest pain	313
Combined anterior posterior spinal fusion	453, 454, 455
Complex noncervical spinal fusion	456, 457, 458
Congestive heart failure	291, 292, 293
Chronic obstructive pulmonary disease, bronchitis, asthma	190, 191, 192, 202, 203
Diabetes	637, 638, 639
Double joint replacement of the lower extremity	461, 462
Esophagitis, gastroenteritis, and other digestive disorders	391, 392
Fractures of the femur and hip or pelvis	533, 534, 535, 536
Gastrointestinal hemorrhage	377, 378, 379
Gastrointestinal obstruction	388, 389, 390
Hip and femur procedures except major joint	480, 481, 482
Lower extremity and humerus procedure except hip, foot, femur	492, 493, 494
Major bowel procedures	329, 330, 331
Major cardiovascular procedure	237, 238
Major joint replacement of the lower extremity	469, 470
Major joint replacement of the upper extremity	483
Medical noninfectious orthopedic	537, 538, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563
Medical peripheral vascular disorders	299, 300, 301
Nutritional and metabolic disorders	640, 641
Other knee procedures	485, 486, 487, 488, 489
Other respiratory	189, 204, 205, 206, 207, 208, 186, 187, 188
Other vascular surgery	252, 253, 254
Pacemaker	242, 243, 244
Pacemaker device replacement or revision	258, 259, 260, 261, 262
Percutaneous coronary intervention	246, 247, 248, 249, 250, 251
Red blood cell disorders	811, 812
Removal of orthopedic devices	495, 496, 497, 498, 499
Renal failure	682, 683, 684
Revision of the hip or knee	466, 467, 468
Sepsis	870, 871, 872
Simple pneumonia and respiratory infections	177, 178, 179, 193, 194, 195
Spinal fusion (noncervical)	459, 460
Stroke	61, 62, 63, 64, 65, 66
Syncope and collapse	312
Transient ischemia	69
Urinary tract infection	689, 690

BPCI Risk Track Example

Exhibit A provides two examples of how Risk Track selection affects gains or losses in the payment reconciliation. The first scenario shows the impact of the Risk Tracks on a high-cost outlier case. Under Risk Track A, the target price is \$16,799, actual spending is \$90,000 and the upper threshold is \$85,000. The awardee is liable for the difference between the upper threshold and the target price (\$68,201) plus 20 percent of the difference between the upper threshold and actual spending (\$1,000). The awardee's total liability would decline from \$69,201 to \$23,906 if it had selected Risk Track C.

However, in Scenario 2 when the awardee's spending comes in below the target price, it would earn \$2,799 under Risk Track A but only \$94 under Risk Track C. This is because the awardee's target price is lower if it selects Risk Track C than it would be in Risk Track A. So although "winsorization" is supposed to reduce the random variation in episode pricing, its effects cannot be predicted with certainty for individual awardees. On occasion, awardees have lost more money in Risk Track C than they would have in Risk Track A because their target prices are reduced more than the benefit they get from a lower outlier limit.

Exhibit A

Impact of Risk Tracks: Two Scenarios

Scenario 1: High-cost Outlier

	Risk Track A (99/1) (Outlier limit = \$85,000)	Risk Track C (75/5) (Outlier limit = \$25,000)
Target price	\$16,799	\$14,094
Actual episode spending (Performance period)	\$90,000	\$90,000
Winsorized episode spending (Performance period)	\$85,000	\$25,000
20% X (Winsorized – Target)	(\$1,000)	(\$13,000)
Episode Reconciliation	(\$69,201)	(\$23,906)

Scenario 2: Spending Below Target Price

	Risk Track A (99/1) (Outlier limit = \$85,000)	Risk Track C (75/5) (Outlier limit = \$25,000)
Target price	\$16,799	\$14,094
Actual episode spending (Performance period)	\$14,000	\$14,000
Winsorized episode spending (Performance period)	\$14,000	\$14,000
20% X (Winsorized – Target)	(\$0)	(\$0)
Episode Reconciliation	\$2,799	\$94

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